In the Specifications:

Please replace the paragraph beginning at page 6, line 27 with the following rewritten paragraph:

With this arrangement, the upper antiferromagnetic layer 62 exchange couples to and pins the contacted portion of the neighboring ferromagnetic free layer 60 through the first contact face 63 and also exchange couples to and pins the contacted portion of the upper ferromagnetic layer 64 through the second contact face ~~63~~ 66. Thus, both faces of the upper antiferromagnetic layer 62 are utilized for pinning. In the conventional approach, by contrast, only the lower face of the upper antiferromagnetic layer, which contacts the adjacent ferromagnetic layer, is utilized in pinning; the upper face is adjacent to the cap layer, where it has no pinning function.

Please replace the paragraph beginning at page 7, line 22 with the following rewritten paragraph:

Referring to Figure 4, the TMR sensor structure 78 has the layers 62 and 64 stacked in the manner described previously, with the cap layer 68 overlying the upper ferromagnetic layer 64 and an external contact 84, made of a high conductivity metal such as tantalum, rhodium, or ruthenium, overlying the cap layer 68. Additionally a decoupling layer 80 overlies and contacts the free layer 60, and a ferromagnetic layer 82 overlies and contacts the decoupling layer 80. The decoupling layer 80 and the ferromagnetic layer 82 thus lie between the free layer 60 and the upper antiferromagnetic layer ~~72~~ 62.